DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 08/04/2011 have been fully considered but they are not persuasive. Applicant alleges that Zhang does not teach that the pieces of segmented data having a data amount adjusted based on a transmission speed which enables communication. Examiner respectfully disagrees. Zhang discloses (col.9, lines 10-26) that the layer (piece) of the video program is downloaded using first or second network, where the layer is downloaded at the faster data transfer rate in the second network area as represented in Fig. 5. Zhang implicitly teaches that the amount of data received in a network is associated with the type of communication network, where the amount of data is received differently in different network areas.

With regard to the dependent claims, the respective rejections are maintained as Applicant has only argued that the secondary references do not cure the deficiencies of base reference, nevertheless it is the Examiner's contention that base reference does not contain any deficiencies. See the rejection below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1, 7-9, and 12** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Above claims recite "...each of the pieces of segmented data having a data amount adjusted based on a transmission speed which enables communication..." It is ambiguous what Applicant means by pieces of segmented data having a data amount adjusted. Applicant is asked to clarify and provide support in the spec. For the purpose of examination, it is the Examiner's position that any distance reads on above limitation and such is in accordance with broadest reasonable interpretation, and from the perspective of one having ordinary skill in the art

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1, 8, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over US PG Pub 2002/0183026 to Naruse (hereafter referenced as Naruse) in view of US PG Pub 2003/022966 to Markman (hereafter referenced as Markman), US PG Pub 2008/0183767 to Zhu (hereafter referenced as Zhu) and US Patent 7,133,486 to Zhang (hereafter referenced as Zhang).

Regarding **claim 1,** "a content reproduction device that performs streaming reproduction of a content" reads on the communication quality of data

between the transmission system and the receiver (abstract) disclosed by Naruse and represented in Fig. 1.

As to "the device comprising: a content reconstruction unit having a buffer in which the pieces of segmented data received by said plurality of communication units is temporarily accumulated, and that reconstructs the pieces of segmented data accumulated in the buffer into the content" Naruse discloses (¶0035, ¶0038 and ¶0111) that the mobile terminal includes data storage unit that stores data, such as audio, video, text, received in receiving unit and transmit the content to decoder unit as represented in Fig. 2 (element 17).

As to "a reproduction unit that extracts the content from the buffer at a predetermined bit rate and that reproduces the content at the predetermined bit rate, the content having been reconstructed by said content reconstruction unit" Naruse discloses (¶0038) that the decoder (reproduction unit) decodes and produce the data received and stored in the storage device to the output device as represented in Fig. 2 (element 18). Naruse further discloses (¶0038 and ¶0043) that the decoder decodes contents based on the predetermined bit rate information received from the control unit.

As to "a communication control unit that: calculates, for every predetermined time, target transmission speeds to be assigned for content reception by causing the target transmission speeds to associate respectively with said plurality of communication units, based on free space in the buffer and the bit rate" Naruse discloses (¶0050) that the receiving control unit in mobile

terminal calculates the transmission speed in order to control the bit rate as represented in Fig. 4. Naruse further discloses (¶0037) that the receiving control unit monitors the data storage volume to be stored in the data storage unit.

As to "transmits a first request signal indicating the calculated target transmission speeds corresponding to said plurality of communication units to the content transmission device via one of said communication units" Naruse discloses (¶0052-¶0054) that the mobile terminal requests the corrected transmission speed to the transmission control unit where transmission system transmit data matching to corrected transmission speed as represented in Fig. 4.

As to "wherein the content transmission device transmits each of the pieces of segmented data of the content to be received by said plurality of communication units at a transmission speed adjusted based on the first request signal, and said plurality of communication units receive each of the pieces of segmented data of the content transmitted from the content transmission device at the transmission speed adjusted by the content transmission device based on the first request signal" Naruse discloses (¶0052-¶0055) that the transmission system transmits data corresponding to corrected transmission speed based on the request received from the mobile wireless terminal as represented in Fig. 4.

Naruse meets all the limitations of the claim except "a plurality of communication units that receive pieces of segmented data of a content transmitted from a content transmission device over a communication path, a part of the pieces of the segmented data of the content being received by one of

said plurality of communication units and another part of the pieces of the segmented data of the content being received by another one of said plurality of communication units and a reconstruction unit, where a buffer temporarily stores this segmented data, reconstructs segmented data into the content." However, Markman discloses (¶0025, ¶0041, ¶0048) that the Media Center, located at user's site, receives media signals (audio/video signal of a program content) using tuner and programming information using modem from head–end and stores this data in memory as represented in Fig. 4 (elements 202, 203, 210). Markman further discloses (¶0085, ¶0110) that the PVR module in Media Center receives both Meta data (programming information) and media signal of the same media program, where PVR module controls a presentation of the media program using meta-data as represented in Fig. 9 (elements 406, 202, 216). Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse's system by using multiple communication units to receive segmented content data as taught by Markman so the media program does not consume excessive bandwidth and the viewer can view his/her favorite program without missing any data (¶0009).

Combination of Naruse and Markman meets all the limitations of the claim except "wherein the pieces of segmented data each includes a counter indicating an order of the segmentation performed by said content transmission device, and said content reconstruction unit reconstructs the content by extracting the pieces of segmented data accumulated in the buffer in the order of values indicated by

said respective counters." However, Zhu discloses (¶0021, ¶0022, ¶0041) that the stream transmitted from the data source to the device includes segment IDs, which is a sequential number, where the device uses the sequence/segment IDs stored in the buffer for reconstructing the data stream. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse and Markman's systems by including a counter value in the segment of stream data as taught by Zhu in order to efficiently reconstruct the data stream using segment IDs (¶0041).

Combination of Naruse, Markman and Zhu meets all the limitations of the claim except "communication units receive in parallel each of the pieces of segmented data of a content, where transmission speeds associate with communication units." However, Zhang discloses (col.9, lines 10-59) that when mobile terminal enters a WLAN coverage area, mobile terminal begins downloading a next layer (piece of segmented data) of the video program using faster transfer rate of WLAN network while the current/previous layer of the program is still being downloaded using the transfer rate of the first/cellular network as represented in Fig. 5. Zhang also discloses (col.9, lines 19-23) that the mobile terminal receives programming data at different transfer rates based on the network coverage areas.

As to "each of the pieces of segmented data having a data amount adjusted based on a transmission speed which enables communication" Zhang discloses (col.9, lines 10-26) that the layer (piece) of the video program is

downloaded using first or second network, where the layer is downloaded at the faster data transfer rate in the second network area as represented in Fig. 5. It is implicitly taught in the spec of Zhang that the amounts of data received within networks are associated with the type of communication networks, where the data is adjusted based on the type of communication network. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman and Zhu's inventions by receiving data in parallel at a transmission speed corresponding with communication unit as taught by Zhang so communication can be carried out at a lower price and at a higher speed in the wireless LAN communication unit in comparison with the cellular phone network communication unit and also to take advantage of increased bandwidth in an interworking environment (col.1, lines 46-47).

Regarding **claim 8,** "a content reproduction method for performing streaming reproduction of a content" reads on the communication quality of data between the transmission system and the receiver (abstract) disclosed by Naruse and represented in Fig. 1.

As to "the method comprising: a content reconstruction step of temporarily accumulating, in a buffer, the pieces of segmented data received in the plurality of communication steps, and reconstructing the pieces of segmented data accumulated in the buffer into the content" Naruse discloses (¶0035, ¶0038 and ¶0111) that the mobile terminal includes data storage unit that stores data, such

as audio, video, text, received in receiving unit and transmit the content to decoder unit as represented in Fig. 2 (element 17).

As to "a reproduction step of extracting the content from the buffer at a predetermined bit rate and reproducing the content at the predetermined bit rate, the content having been reconstructed in the content reconstruction step" Naruse discloses (¶0038) that the decoder (reproduction unit) decodes and produce the data received and stored in the storage device to the output device as represented in Fig. 2 (element 18). Naruse further discloses (¶0038 and ¶0043) that the decoder decodes contents based on the predetermined bit rate information received from the control unit.

As to "a communication control step of: calculating, for every predetermined time, target transmission speeds to be assigned for content reception by causing the target transmission speeds to associate respectively with the plurality of communication steps, based on free space in the buffer and the bit rate" Naruse discloses (¶0050) that the receiving control unit in mobile terminal calculates the transmission speed in order to control the bit rate as represented in Fig. 4. Naruse further discloses (¶0037) that the receiving control unit monitors the data storage volume to be stored in the data storage unit.

As to "transmitting a first request signal indicating the calculated target transmission speeds corresponding to the plurality of communication units to the content transmission device using one of the plurality of communication steps" Naruse discloses (¶0052-¶0054) that the mobile terminal requests the corrected

transmission speed to the transmission control unit where transmission system transmit data matching to corrected transmission speed as represented in Fig. 4.

As to "wherein the content transmission device transmits the pieces of segmented data of the content to be received by said plurality of communication units at a transmission speed adjusted based on the first request signal, and said plurality of communication units receive the pieces of segmented data of the content transmitted from the content transmission device at the transmission speed adjusted by the content transmission device based on the first request signal" Naruse discloses (¶0052-¶0055) that the transmission system transmits data corresponding to corrected transmission speed based on the request received from the mobile wireless terminal as represented in Fig. 4.

Naruse meets all the limitations of the claim except "a plurality of communication steps each receives segmented data of a content transmitted from a content transmission device over a communication path are received by a plurality of communication units, a part of the pieces of the segmented data of the content being received by one of said plurality of communication units and another part of the pieces of the segmented data of the content being received by another one of said plurality of communication units and a reconstruction step, where a buffer temporarily accumulates this segmented data, reconstructs segmented data into the content." However, Markman discloses (¶0025, ¶0041, ¶0048) that the Media Center, located at user's site, receives media signals (audio/video signal of a program content) using tuner and programming

information using modem from head–end and stores this data in memory as represented in Fig. 4 (elements 202, 203, 210). Markman further discloses (¶0085, ¶0110) that the PVR module in Media Center receives both Meta data (programming information) and media signal of the same media program, where PVR module controls a presentation of the media program using meta-data as represented in Fig. 9 (elements 406, 202, 216). Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse system by using multiple communication units to receive segmented content data as taught by Markman so the media program does not consume excessive bandwidth and the viewer can view his/her favorite program without missing any data (¶0009).

Combination of Naruse and Markman meets all the limitations of the claim except "wherein the pieces of segmented data each includes a counter indicating an order of the segmentation performed by said content transmission device and said content reconstruction step reconstructs the content by extracting the pieces of segmented data accumulated in the buffer in the order of values indicated by said respective counters." However, Zhu discloses (¶0021, ¶0022, ¶0041) that the stream transmitted from the data source to the device includes segment IDs, which is a sequential number, where the device uses the sequence/segment IDs stored in the buffer for reconstructing the data stream. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse and Markman's systems by including a counter value in the

segment of stream data as taught by Zhu in order to efficiently reconstruct the data stream using segment IDs (¶0041).

Combination of Naruse, Markman and Zhu meets all the limitations of the claim except "communication units receive in parallel each of the pieces of segmented data of a content, where transmission speeds associate with communication units." However, Zhang discloses (col.9, lines 10-59) that when mobile terminal enters a WLAN coverage area, mobile terminal begins downloading a next layer (piece of segmented data) of the video program using faster transfer rate of WLAN network while the current/previous layer of the program is still being downloaded using the transfer rate of the first/cellular network as represented in Fig. 5. Zhang also discloses (col.9, lines 19-23) that the mobile terminal receives programming data at different transfer rates based on the network coverage areas.

As to "each of the pieces of segmented data having a data amount adjusted based on a transmission speed which enables communication" Zhang discloses (col.9, lines 10-26) that the layer (piece) of the video program is downloaded using first or second network, where the layer is downloaded at the faster data transfer rate in the second network area as represented in Fig. 5. It is implicitly taught in the spec of Zhang that the amounts of data received within networks are associated with the type of communication networks, where the data is adjusted based on the type of communication network. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the

invention to modify Naruse, Markman and Zhu's inventions by receiving data in parallel at a transmission speed corresponding with communication unit as taught by Zhang so communication can be carried out at a lower price and at a higher speed in the wireless LAN communication unit in comparison with the cellular phone network communication unit and also to take advantage of increased bandwidth in an interworking environment (col.1, lines 46-47).

Regarding **claim 10,** "a program stored on a non-transitory computer-readable recording medium for a content reproduction device that performs streaming reproduction of a content, the program causing a computer to execute the steps included in the content reproduction method according to claim 8" Markman discloses (¶0118 and claim 52) that the machine readable medium storing the computer program for the above mentioned invention. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify Naruse's system by storing computer readable program on recorded medium as taught by Markman in order to easily install computer program on the other computer devices.

6. **Claims 2-4, 7, 9, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Naruse in view of Markman, Zhu, and Zhang, and further in view of US PG Pub 2005/0043999 to Ji (hereafter referenced as Ji).

Regarding **claim 2,** combination of Naruse, Markman, Zhu, and Zhang meets all the limitations of the claim except "the content reproduction device wherein the first request signal indicates addresses for said plurality of communication units." However, Ji discloses (¶0033) that physical address of communication interface is used to submit a request. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, Zhu, and Zhang's inventions by indicating addresses for communication units as taught by Ji in order to deliver wide range of entertainment and data services to users using correct transmission speed.

Regarding **claim 3,** "the content reproduction device wherein the first request signal is a content obtainment command indicating addresses for said plurality of communication units" Naruse discloses (¶0052 and ¶0053) that the mobile terminal requests the corrected transmission speed to the transmission control unit. Combination of Naruse, Markman, Zhu, and Zhang does not explicitly teach that the request signal includes the address for communication unit. However, Ji discloses (¶0033) that physical address of communication interface is used to submit a request. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, Zhu, and Zhang's inventions by indicating addresses for communication units as taught by Ji in order to deliver wide range of entertainment and data services to users using correct transmission speed.

Regarding **claim 4,** combination of Naruse, Markman, Zhu, and Zhang meets all the limitations of the claim except "the content reproduction device further comprising: a communication fee storage unit which stores, in advance, communication fees of said plurality of communication units, wherein said communication control unit determines the target transmission speeds of said plurality of communication units based on the communication fees." However, Ji discloses (¶0003, ¶0022, ¶0041) that the wireless access to networks is provided on a pay-per use basis, where the funds are deposited in advance. Ji further discloses (¶0043) that the deposited fund becomes a token for a connection usage allocation, which is determined by the rate of connection.
Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, Zhu, and Zhang's inventions by previously paying for usage data as taught by Ji in order to provide service to any customer and not just the regular subscribed customer (¶0028).

Regarding **claim 7,** "a content transmission device that transmits a content over a communication path" reads on the communication quality of data between the transmission system and the receiver (abstract) disclosed by Naruse and represented in Fig. 1.

As to "the device comprising: a content accumulation unit that accumulates a content" Naruse discloses (¶0032) that the data storage unit stores content data as represented in Fig. 2 (element 12).

As to "a communication unit that communicates, over the communication path, with a content reproduction device that includes a plurality of communication units with different addresses" Naruse discloses (¶0034) that the data output unit and transmission control unit communicates with mobile terminal over communication path as represented in Fig. 2 (elements 13, 14, 15, 16, 20).

As to "a content segmentation unit that: determines amounts of content data to be transmitted based on target transmission speeds of the respective addresses every time a first request signal indicating target transmission speeds of the respective addresses is received, the amounts of content data to be transmitted being determined for the respective addresses" Naruse discloses (¶0050) that the receiving control unit in mobile terminal calculates the transmission speed in order to control the bit rate as represented in Fig. 4. Naruse further discloses (¶0037) that the receiving control unit monitors the data storage volume to be stored in the data storage unit. Naruse further discloses (¶0052 and ¶0053) that the mobile terminal requests the corrected transmission speed to the transmission control unit as represented in Fig. 4.

As to "segments the content accumulated in said content accumulation unit into pieces of segmented data and transmits the pieces of segmented data of the content addressed to the addresses via said communication unit" Naruse

discloses (¶0034) that the transmission system transmits packetized data of audio, video, data to mobile terminal as represented in Fig. 2.

As to "wherein said content segmentation unit transmits the pieces of segmented data of the content to be received by the plurality of communication units at a transmission speed adjusted based on the first request signal, and the plurality of communication units receive the pieces of segmented data of the content transmitted from said content segmentation unit at the transmission speed adjusted by said content segmentation unit based on the first request signal" Naruse discloses (¶0052-¶0055) that the transmission system transmits data corresponding to corrected transmission speed based on the request received from the mobile wireless terminal as represented in Fig. 4.

Naruse meets all the limitations of the claim except "a part of the pieces of the segmented data of the content being received by one of said plurality of communication units and another part of the pieces of the segmented data of the content being received by another one of said plurality of communication units, wherein the plurality of communication units receive a part of the pieces of the segmented data of the content obtained by segmenting data of a single content." However, Markman discloses (¶0025, ¶0041, ¶0048) that the Media Center, located at user's site, receives media signals (audio/video signal of a program content) using tuner and programming information using modem from head–end and stores this data in memory as represented in Fig. 4 (elements 202, 203, 210). Markman further discloses (¶0085, ¶0110) that the PVR module in Media

Center receives both Meta data (programming information) and media signal of the same media program, where PVR module controls a presentation of the media program using meta-data as represented in Fig. 9 (elements 406, 202, 216). Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse system by using multiple communication units to receive segmented content data as taught by Markman so the media program does not consume excessive bandwidth and the viewer can view his/her favorite program without missing any data (¶0009).

Combination of Naruse and Markman meets all the limitations of the claim except "the pieces of segmented data each includes a counter indicating an order of the segmentation performed and the plurality of communication units reconstruct the segmented data based on the order indicated by the counter." However, Zhu discloses (¶0021, ¶0022, ¶0041) that the stream transmitted from the data source to the device includes segment IDs, which is a sequential number, where the device uses the sequence/segment IDs stored in the buffer for reconstructing the data stream. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse and Markman's systems by including a counter value in the segment of stream data as taught by Zhu in order to efficiently reconstruct the data stream using segment IDs (¶0041).

Combination of Naruse, Markman and Zhu meets all the limitations of the claim except "communication units receive in parallel each of the pieces of

segmented data of a content, where content data is transmitted based on transmission speeds of addresses/communication units." However, Zhang discloses (col.9, lines 10-59) that when mobile terminal enters a WLAN coverage area, mobile terminal begins downloading a next layer (piece of segmented data) of the video program using faster transfer rate of WLAN network while the current/previous layer of the program is still being downloaded using the transfer rate of the first/cellular network as represented in Fig. 5. Zhang also discloses (col.9, lines 19-23) that the mobile terminal receives programming data at different transfer rates based on the network coverage areas.

As to "each of the pieces of segmented data having a data amount adjusted based on a transmission speed which enables communication" Zhang discloses (col.9, lines 10-26) that the layer (piece) of the video program is downloaded using first or second network, where the layer is downloaded at the faster data transfer rate in the second network area as represented in Fig. 5. It is implicitly taught in the spec of Zhang that the amounts of data received within networks are associated with the type of communication networks, where the data is adjusted based on the type of communication network. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman and Zhu's inventions by receiving data in parallel at a transmission speed corresponding with communication unit as taught by Zhang so communication can be carried out at a lower price and at a higher speed in the wireless LAN communication unit in comparison with the

cellular phone network communication unit and also to take advantage of increased bandwidth in an interworking environment (col.1, lines 46-47).

Combination of Naruse, Markman, Zhu and Zhang meets all the limitations of the claim except "content transmitted to communication units with addresses". However, Ji discloses (¶0033) that physical address of communication interface is used to submit a request, where this address is used by the system to provide data. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, Zhu, and Zhang's inventions by indicating addresses for communication units as taught by Ji in order to deliver wide range of entertainment and data services to users using correct transmission speed.

Regarding **claim 9,** "a content transmission method for transmitting a content over a communication path" reads on the communication quality of data between the transmission system and the receiver (abstract) disclosed by Naruse and represented in Fig. 1.

As to "the method comprising: a communication step of communicating, over the communication path, with a content reproduction device that includes a plurality of communication units with different addresses" Naruse discloses (¶0034) that the data output unit and transmission control unit communicates with mobile terminal over communication path as represented in Fig. 2 (elements 13, 14, 15, 16, 20).

As to "a content segmentation step of: determining amounts of content data to be transmitted based on target transmission speeds of the respective addresses every time a first request signal indicating target transmission speeds of the respective addresses is received, the amounts of content data to be transmitted being determined for the respective addresses" Naruse discloses (¶0050) that the receiving control unit in mobile terminal calculates the transmission speed in order to control the bit rate as represented in Fig. 4. Naruse further discloses (¶0037) that the receiving control unit monitors the data storage volume to be stored in the data storage unit. Naruse further discloses (¶0052 and ¶0053) that the mobile terminal requests the corrected transmission speed to the transmission control unit as represented in Fig. 4.

As to "segmenting the content accumulated in a content accumulation unit into pieces of segmented data and transmitting the pieces of segmented data of the content addressed to the addresses using said communication step" Naruse discloses (¶0034) that the transmission system transmits packetized data of audio, video, data to mobile terminal as represented in Fig. 2.

As to "wherein the content segmentations step transmits the pieces of segmented data of the content to be received by the plurality of communication units at a transmission speed adjusted based on the first request signal, and the plurality of communication units receive the pieces of segmented data of the content transmitted during the content segmentation step at the transmission speed adjusted by said content segmentation unit based on the first request

signal" Naruse discloses (¶0052-¶0055) that the transmission system transmits data corresponding to corrected transmission speed based on the request received from the mobile wireless terminal as represented in Fig. 4.

Naruse meets all the limitations of the claim except "a part of the pieces of the segmented data of the content being received by one of said plurality of communication units and another part of the pieces of the segmented data of the content being received by another one of said plurality of communication units; wherein the plurality of communication units receive a part of the pieces of the segmented data of the content obtained by segmenting data of a single content." However, Markman discloses (¶0025, ¶0041, ¶0048) that the Media Center, located at user's site, receives media signals (audio/video signal of a program content) using tuner and programming information using modem from head–end and stores this data in memory as represented in Fig. 4 (elements 202, 203, 210). Markman further discloses (¶0085, ¶0110) that the PVR module in Media Center receives both Meta data (programming information) and media signal of the same media program, where PVR module controls a presentation of the media program using meta-data as represented in Fig. 9 (elements 406, 202, 216). Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse's system by using multiple communication units to receive segmented content data as taught by Markman so the media program does not consume excessive bandwidth and the viewer can view his/her favorite program without missing any data (¶0009).

Combination of Naruse and Markman meets all the limitations of the claim except "each segmented data including a counter indicating an order of the segmentation performed and plurality of communication units reconstruct the segmented data based on the order indicated by the counter." However, Zhu discloses (¶0021, ¶0022, ¶0041) that the stream transmitted from the data source to the device includes segment IDs, which is a sequential number, where the device uses the sequence/segment IDs stored in the buffer for reconstructing the data stream. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse and Markman's systems by including a counter value in the segment of stream data as taught by Zhu in order to efficiently reconstruct the data stream using segment IDs (¶0041).

Combination of Naruse, Markman and Zhu meets all the limitations of the claim except "communication units receive in parallel each of the pieces of segmented data of a content, where content data is transmitted based on transmission speeds of addresses/communication units." However, Zhang discloses (col.9, lines 10-59) that when mobile terminal enters a WLAN coverage area, mobile terminal begins downloading a next layer (piece of segmented data) of the video program using faster transfer rate of WLAN network while the current/previous layer of the program is still being downloaded using the transfer rate of the first/cellular network as represented in Fig. 5. Zhang also discloses (col.9, lines 19-23) that the mobile terminal receives programming data at different transfer rates based on the network coverage areas.

As to "each of the pieces of segmented data having a data amount adjusted based on a transmission speed which enables communication" Zhang discloses (col.9, lines 10-26) that the layer (piece) of the video program is downloaded using first or second network, where the layer is downloaded at the faster data transfer rate in the second network area as represented in Fig. 5. It is implicitly taught in the spec of Zhang that the amounts of data received within networks are associated with the type of communication networks, where the data is adjusted based on the type of communication network. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman and Zhu's inventions by receiving data in parallel at a transmission speed corresponding with communication unit as taught by Zhang so communication can be carried out at a lower price and at a higher speed in the wireless LAN communication unit in comparison with the cellular phone network communication unit and also to take advantage of increased bandwidth in an interworking environment (col.1, lines 46-47).

Combination of Naruse, Markman, Zhu and Zhang meets all the limitations of the claim except "content transmitted to communication units with addresses". However, Ji discloses (¶0033) that physical address of communication interface is used to submit a request, where this address is used by the system to provide data. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, Zhu and Zhang's inventions by indicating addresses for communication units as taught by Ji in

order to deliver wide range of entertainment and data services to users using correct transmission speed.

Regarding **claim 11,** "a program stored on a non-transitory computer-readable recording medium for a content transmission device that transmits a content over a communication path, the program causing a computer to execute the steps included in the content transmission method according to claim 9." Markman discloses (¶0118 and claim 52) that the machine readable medium storing the computer program for the above mentioned invention. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify Naruse's system by storing computer readable program on recorded medium as taught by Markman in order to easily install computer program on the other computer devices.

7. **Claims 5, 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Naruse in view of Markman, Zhu, and Zhang, and further in view of US PG Pub 2004/0045027 to Takamura (hereafter referenced as Takamura).

Regarding **claim 5,** "the content reproduction device further comprising: a reception state storage unit which stores, in advance, data reception speeds of said plurality of communication units at each position on the traveling route" Naruse discloses (¶0097-¶0099) that the storage unit in mobile wireless terminal

stores content data in case the data transmission speed decreases on the traveling path.

As to "wherein said communication control unit determines the target transmission speeds of said plurality of communication units based on free space in the buffer and the data reception speeds of said plurality of communication units at a position indicated by information on a planned transit position after the present position, the data reception speeds being stored in said reception state storage unit" Naruse discloses (¶0050) that the receiving control unit in mobile terminal determines the transmission speed in order to control the bit rate as represented in Fig. 4. Naruse further discloses (¶0037) that the receiving control unit monitors the data storage volume to be stored in the data storage unit. Naruse also discloses (¶0097-¶0099) that the storage unit in mobile wireless terminal stores content data in case the data transmission speed decreases on the traveling path

Combination of Naruse, Markman Zhu, and Zhang meets all the limitations of the claim except "a present position detection unit that detects a present position and a traveling route obtainment unit that obtains a traveling route starting from the present position detected by said present position detection unit." However, Takamura discloses (¶0069) that the portable terminal includes GPS device that detects the moving speed of the vehicle. However, the examiner takes official notice that it was well known in the art at the time of the invention to use GPS device to detect the present position and to obtain a

traveling route. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to use GPS device to detect the present position and to obtain a traveling route to Naruse, Markman Zhu, and Zhang's systems would have yielded predictable result of distributing program information data to portable terminal that is within the matching communication areas.

Regarding **claim 6,** "the content reproduction device further comprising: a reception speed measurement unit that measures data reception speeds of said plurality of communication units" Naruse discloses (¶0060) that the unit determines reception/transmission speed received in mobile terminal as represented in Fig. 5 (element SP14).

As to "wherein said communication control unit: calculates modified target transmission speeds, each being calculated based on a difference between the target transmission speed assigned for the content reception of each of said communication units and each of the data reception speeds measured by said reception speed measurement unit and transmits a second request signal indicating the calculated target transmission speeds to the content transmission device via one of said communication units" Naruse discloses (¶0048-¶0055) that the transmission system transmits pilot signal to mobile terminal where mobile terminal determines transmission speed and based on the reception speed received in mobile terminal, it transmits request of corrected transmission speed to transmission system. Transmission system receives the request of corrected

transmission speed and transmits data using modulation system corresponding to corrected transmission speed and mobile terminal receives data at corrected transmission speed as represented in Fig. 4 (elements SP1-SP9).

8. **Claims 12, 14, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Naruse in view of Markman, Zhang, Ji and further in view of US PG Pub 2007/0112948 to Uhlik (hereafter referenced as Uhlik).

Regarding **claim 12,** "a content reproduction device that performs streaming reproduction of a content" reads on the communication quality of data between the transmission system and the receiver (abstract) disclosed by Naruse and represented in Fig. 1.

As to "the device comprising: a content reconstruction unit having a buffer in which the pieces of segmented data received by said plurality of communication units is temporarily accumulated, and that reconstructs the pieces of segmented data accumulated in the buffer into the content" Naruse discloses (¶0035, ¶0038 and ¶0111) that the mobile terminal includes data storage unit that stores data, such as audio, video, text, received in receiving unit and transmit the content to decoder unit as represented in Fig. 2 (element 17).

As to "a reproduction unit that extracts the content from the buffer at a predetermined bit rate and that reproduces the content at the predetermined bit rate, the content having been reconstructed by said content reconstruction unit" Naruse discloses (¶0038) that the decoder (reproduction unit) decodes and

produce the data received and stored in the storage device to the output device as represented in Fig. 2 (element 18). Naruse further discloses (¶0038 and ¶0043) that the decoder decodes contents based on the predetermined bit rate information received from the control unit.

As to "a communication control unit that: calculates, for every predetermined time, target transmission speeds to be assigned for content reception by causing the target transmission speeds to associate respectively with said plurality of communication units, based on free space in the buffer and the bit rate" Naruse discloses (¶0050) that the receiving control unit in mobile terminal calculates the transmission speed in order to control the bit rate as represented in Fig. 4. Naruse further discloses (¶0037) that the receiving control unit monitors the data storage volume to be stored in the data storage unit.

As to "transmits a first request signal indicating the calculated target transmission speeds corresponding to said plurality of communication units to the content transmission device via one of said plurality of communication units" Naruse discloses (¶0052-¶0054) that the mobile terminal requests the corrected transmission speed to the transmission control unit where transmission system transmit data matching to corrected transmission speed as represented in Fig. 4.

As to "wherein the content transmission device transmits the pieces of segmented data of the content to be received by said plurality of communication units at a transmission speed adjusted based on the first request signal, and said plurality of communication units receive the pieces of segmented data of the

content transmitted from the content transmission device at the transmission speed adjusted by the content transmission device based on the first request signal" Naruse discloses (¶0052-¶0055) that the transmission system transmits data corresponding to corrected transmission speed based on the request received from the mobile wireless terminal as represented in Fig. 4.

Naruse meets all the limitations of the claim except "a plurality of communication units that receive pieces of segmented data of a content transmitted from a content transmission device over a communication path, a part of the pieces of the segmented data of the content being received by one of said plurality of communication units and another part of the pieces of the segmented data of the content being received by another one of said plurality of communication units and a reconstruction unit, where a buffer temporarily stores this segmented data, reconstructs segmented data into the content." However, Markman discloses (¶0025, ¶0041, ¶0048) that the Media Center, located at user's site, receives media signals (audio/video signal of a program content) using tuner and programming information using modem from head–end and stores this data in memory as represented in Fig. 4 (elements 202, 203, 210). Markman further discloses (¶0085, ¶0110) that the PVR module in Media Center receives both Meta data (programming information) and media signal of the same media program, where PVR module controls a presentation of the media program using meta-data as represented in Fig. 9 (elements 406, 202, 216). Therefore, it would have been obvious to one of the ordinary skills in the art at

the time of the invention to modify Naruse's system by using multiple communication units to receive segmented content data as taught by Markman so the media program does not consume excessive bandwidth and the viewer can view his/her favorite program without missing any data (¶0009).

Combination of Naruse and Markman meets all the limitations of the claim except "communication units receive in parallel each of the pieces of segmented data of a content, where transmission speeds associate with communication units." However, Zhang discloses (col.9, lines 10-59) that when mobile terminal enters a WLAN coverage area, mobile terminal begins downloading a next layer (piece of segmented data) of the video program using faster transfer rate of WLAN network while the current/previous layer of the program is still being downloaded using the transfer rate of the first/cellular network as represented in Fig. 5. Zhang also discloses (col.9, lines 19-23) that the mobile terminal receives programming data at different transfer rates based on the network coverage areas.

As to "each of the pieces of segmented data having a data amount adjusted based on a transmission speed which enables communication" Zhang discloses (col.9, lines 10-26) that the layer (piece) of the video program is downloaded using first or second network, where the layer is downloaded at the faster data transfer rate in the second network area as represented in Fig. 5. It is implicitly taught in the spec of Zhang that the amounts of data received within networks are associated with the type of communication networks, where the

data is adjusted based on the type of communication network. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman and Zhu's inventions by receiving data in parallel at a transmission speed corresponding with communication unit as taught by Zhang so communication can be carried out at a lower price and at a higher speed in the wireless LAN communication unit in comparison with the cellular phone network communication unit and also to take advantage of increased bandwidth in an interworking environment (col.1, lines 46-47).

Combination of Naruse, Markman and Zhang meets all the limitations of the claim except "a communication fee accumulation unit that accumulates, in advance, communication fees of the respective communication units; determine a use order of said plurality of communication units based on the communication fees accumulated in the communication fee accumulation unit; and calculating target transmission speeds based on the determined use order." However, Ji discloses (¶0003, ¶0022, ¶0041) that the wireless access to networks is provided on a pay-per use basis, where the funds are deposited in advance. Ji further discloses (¶0042, ¶0043) that the deposited fund becomes a token for a connection usage allocation, which is determined by the rate of connection. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, and Takamura's inventions by previously paying for usage data as taught by Ji in order to provide service to any customer and not just the regular subscribed customer (¶0028).

Combination of Naruse, Markman, Zhang, and Ji meets all the limitations of the claim except "calculating target transmission speeds based on the determined use order." However, Uhlik discloses (¶0070, ¶0085) that the quality/speed of the signal is determined based on the price paid by the client. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, Zhang and Ji's inventions by providing speed based on the price as taught by Uhlik so the users are charged accordingly.

Regarding **claim 14,** "the content reproduction device wherein the first request signal indicates addresses for said respective communication units" Ji discloses (¶0033) that physical address of communication interface is used to submit a request. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, and Zhang's inventions by indicating addresses for communication units as taught by Ji in order to deliver wide range of entertainment and data services to users using correct transmission speed.

Regarding **claim 15,** "the content reproduction device wherein the first request signal is a content obtainment command indicating addresses for said respective communication units" Naruse discloses (¶0052 and ¶0053) that the mobile terminal requests the corrected transmission speed to the transmission

control unit. Naruse does not explicitly teach that the request signal includes the address for communication unit. However, Ji discloses (¶0033) that physical address of communication interface is used to submit a request. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Naruse, Markman, and Zhang's inventions by indicating addresses for communication units as taught by Ji in order to deliver wide range of entertainment and data services to users using correct transmission speed.

9. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Naruse in view of Markman, Zhang, Ji, and Uhlik as applied to claim 12 above, and further in view of Zhu.

Regarding **claim 13,** combination of Naruse, Markman, Zhang, Ji, and Uhlik meets all the limitations of the claim except "the content reproduction device wherein the pieces of segmented data each includes a counter indicating an order of the segmentation performed by said content transmission device and said content reconstruction unit reconstructs the content by extracting the pieces of segmented data accumulated in the buffer in order of values indicated by said respective counters" However, Zhu discloses (¶0021, ¶0022, ¶0041) that the stream transmitted from the data source to the device includes segment IDs, which is a sequential number, where the device uses the sequence/segment IDs stored in the buffer for reconstructing the data stream. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to

modify Naruse, Markman, Zhang, Ji and Uhlik's systems by including a counter value in the segment of stream data as taught by Zhu in order to efficiently reconstruct the data stream using segment IDs (¶0041).

10. **Claim 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Naruse in view of Markman, Zhang, Ji, and Uhlik as applied to claim 12 above, and further in view of Takamura.

Regarding **claim 16,** "the content reproduction device further comprising: a reception state storage unit which stores, in advance, data reception speeds of said respective communication units at each position on the traveling route obtained by said traveling route obtainment unit" Naruse discloses (¶0097-¶0099) that the storage unit in mobile wireless terminal stores content data in case the data transmission speed decreases on the traveling path.

As to "wherein said communication control unit determines the target transmission speeds of said respective communication units based on free space in said buffer and the data reception speeds of said respective communication units at a position indicated by information on a planned transit position after the present position, the data reception speeds being stored in said reception state storage unit" Naruse discloses (¶0050) that the receiving control unit in mobile terminal determines the transmission speed in order to control the bit rate as represented in Fig. 4. Naruse further discloses (¶0037) that the receiving control unit monitors the data storage volume to be stored in the data storage unit.

Naruse also discloses (¶0097-¶0099) that the storage unit in mobile wireless terminal stores content data in case the data transmission speed decreases on the traveling path

Combination of Naruse, Markman, Zhang, Ji, and Uhlik meets all the limitations of the claim except "a present position detection unit detects a present position and a traveling route obtainment unit that obtains a traveling route starting from the present position detected by said present position detection unit." However, Takamura discloses (¶0069) that the portable terminal includes GPS device that detects the moving speed of the vehicle. However, the examiner takes official notice that it was well known in the art at the time of the invention to use GPS device to detect the present position and to obtain a traveling route. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to use GPS device to detect the present position and to obtain a traveling route to Naruse, Markman, Zhang, Ji and Uhlik's systems would have yielded predictable result of distributing program information data to portable terminal that is within the matching communication areas.

Regarding **claim 17,** "the content reproduction device further comprising: a reception speed measurement unit that measures data reception speeds of said plurality of communication units" Naruse discloses (¶0060) that the unit

determines reception/transmission speed received in mobile terminal as represented in Fig. 5 (element SP14).

As to "wherein said communication control unit: calculates modified target transmission speeds, each being calculated based on a difference between the target transmission speed assigned for the content reception of each of said communication units and each of the data reception speeds measured by said reception speed measurement unit and transmits a second request signal indicating the calculated target transmission speeds to the content transmission device via one of said communication units" Naruse discloses (¶0048-¶0055) that the transmission system transmits pilot signal to mobile terminal where mobile terminal determines transmission speed and based on the reception speed received in mobile terminal, it transmits request of corrected transmission speed to transmission system. Transmission system receives the request of corrected transmission speed and transmits data using modulation system corresponding to corrected transmission speed and mobile terminal receives data at corrected transmission speed as represented in Fig. 4 (elements SP1-SP9).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PINKAL R. CHOKSHI whose telephone number is (571)270-3317. The examiner can normally be reached on Monday-Friday 8 - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian T. Pendleton can be reached on 571-272-7527. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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